AI Assisted Coding
Lab Assignment 5.3

Name : K. Charan Yadav

Hall Ticket no : 2303A52367

Batch No : 20

Task -1:

Prompt: Create a Python program to securely take a username and password from the user and display appropriate messages for valid and invalid login.

```
Assignment-5.3.py ×

Assignment-5.3.py > ...
    1    #TASK 1: Privacy & Data Security in AI-Generated Code
    2    username = "admin"
    3    password = "1234"
    4
    5    u = input("Enter username: ")
    6    p = input("Enter password: ")
    7
    8    if u == username and p == password:
    9        print("Login successful")
    10   else:
    11       print("Invalid credentials")
    12
    13   #TASK 1: Error Handling in AI-Generated Code
    14   import getpass
    15
    16   stored_username = "admin"
    17   stored_password_hash = "hashed_password_placeholder"
    18
    19   username = input("Enter username: ")
    20   password = getpass.getpass("Enter password: ")
    21
    22   if username == stored_username:
    23       print("Password verification required")
    24   else:
    25       print("Invalid credentials")
    26
    27
```

OUTPUT :

```
PS C:\Users\chara\OneDrive\Desktop\Ai-Assisted Coding> &
ve/Desktop/Ai-Assisted Coding/Assignment-5.3.py"
Enter username: admin
Enter password: 1234
Login successful
Enter username: admin
Enter password:
Password verification required
PS C:\Users\chara\OneDrive\Desktop\Ai-Assisted Coding>
```

Task 2:

Prompt: Prompt (Task 2: Bias Detection)

- Write a Python function that simulates a loan approval system.
- The function should take a person's name, gender, and income as input and return whether the loan is approved or rejected.
- Use this example to show how **bias** can appear in AI-generated decision systems and why such logic should be avoided in real applications.

```python
27
28   #Task 2: Bias Detection in AI-Generated Decision Systems
29   def approve_loan(name, gender, income):
30       if gender == "male" and income > 30000:
31           return "Loan Approved"
32       else:
33           return "Loan Rejected"
34
```

Output:

```
PS C:\Users\chara\OneDrive\Desktop\Ai-Assisted Coding> &
ktop/Ai-Assisted Coding/Assignment-5.3.py"
Loa
Loa  Focus folder in explorer (ctrl + click)
PS C:\Users\chara\OneDrive\Desktop\Ai-Assisted Coding>
```

Task 3:

Prompt : Prompt (Task 3: Transparency & Explainability)

- Write a Python program that implements the binary search algorithm.
- The program should clearly show each step of the logic used to find a target element in a sorted list.
- This code should demonstrate **transparency and explainability** by making the decision process easy to understand.

```
39    #Task 3: Transparency and Explainability in AI-Generated Code
40    def binary_search(arr, low, high, target):
41        if low > high:
42            return -1
43
44        mid = (low + high) // 2
45
46        if arr[mid] == target:
47            return mid
48        elif target < arr[mid]:
49            return binary_search(arr, low, mid - 1, target)
50        else:
51            return binary_search(arr, mid + 1, high, target)
52
53    arr = [2, 4, 6, 8, 10]
54    target = 8
55
56    result = binary_search(arr, 0, len(arr) - 1, target)
57    print("Element found at index:", result)
58
```

Output :

```
PS C:\Users\chara\OneDrive\Desktop\Ai-Assisted Coding> &
ktop/Ai-Assisted Coding/Assignment-5.3.py"
Element found at index: 3
PS C:\Users\chara\OneDrive\Desktop\Ai-Assisted Coding>
```

Task 4 :

Prompt : Prompt (Task 4: Ethical Evaluation)

- Write a Python program that calculates a score for job applicants based on skills, experience, and education.
- Use this program to show how **ethical issues and bias** can appear in AI-based scoring systems, especially when personal attributes influence the final score.

```
61    #Task 4:Ethical Evaluation of AI-Based Scoring Systems
62    def score_applicant(name, gender, skills, experience, education):
63        score = skills * 2 + experience * 3
64        if education == "PhD":
65            score += 5
66        if gender == "male":
67            score += 2
68        return score
69
70    score1 = score_applicant("Anita", "female", 8, 3, "BTech")
71    score2 = score_applicant("Rahul", "male", 8, 3, "BTech")
72
73    print("Score for Anita:", score1)
74    print("Score for Rahul:", score2)
75
```

Output :

```
PS C:\Users\chara\OneDrive\Desktop\Ai-Assisted Coding> &
ktop/Ai-Assisted Coding/Assignment-5.3.py"
Score for Anita: 25
Score for Rahul: 27
PS C:\Users\chara\OneDrive\Desktop\Ai-Assisted Coding>
```

Task 5 :

Prompt : Prompt (Task 5: Inclusiveness & Ethical Design)

- Write a Python program that assigns employees to departments.
- Use this program to demonstrate how using personal attributes like gender in decision-making can affect inclusiveness and ethics in AI-generated systems.

```
77    #Task 5: Inclusiveness and Ethical Variable Design
78    def process_employee(name, gender):
79        if gender == "female":
80            print("Assign to HR department")
81        else:
82            print("Assign to Technical department")
83
84    process_employee("Anita", "female")
85    process_employee("Rahul", "male")
```

Output :

```
PS C:\Users\chara\OneDrive\Desktop\Ai-Assisted Coding> &
ktop/Ai-Assisted Coding/Assignment-5.3.py"
Assign to HR department
Assign to Technical department
PS C:\Users\chara\OneDrive\Desktop\Ai-Assisted Coding>
```